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(54) Title: <b>SKIN CLEANING COMPOSITION</b>			
(57) Abstract			
<p>Skin cleaning composition consists of 1 to 60 % by weight of natural and/or synthetic polymers and of a solvent up to the total amount of 100 % by weight. As a solvent water is used, or possibly a mixture of water and a monobasic alcohol, wherein the ratio monobasic alcohol : water is from 1 : 6 to 3 : 1. The composition may further contain preserving additives, cosmetically active substances, tensides, or possibly aromatic compositions.</p>			

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## Skin cleaning composition

### Technical Field

The invention concerns a composition for cleaning skin, especially of hands, in the form of a gel or possibly of a viscous solution, suitable to be used mainly under extreme conditions of water shortage.

### Background Art

At present different skin cleaning compositions are well known and used which are based mainly on low- and medium-molecular substances showing detergent efficiency. These comprise especially various soaps, shampoos, body and shower gels and the like. In addition special cleaning preparations are used which are designed especially for cleaning of extremely dirty hand skin. These are in most cases compositions based on highly efficient detergents, mechanical abrasives or possibly organic solvents.

Many of the above mentioned compositions contain in their formulas one of the natural or synthetic water-soluble polymers as one of their components.

For example, patent WO 96/29979 describes a compositions for washing and cosmetic treatment of skin, based on anionic or cationic or nonionic tensides and cosmetically active substances, wherein water-soluble polymers, like polyvinylalcohol, hydroxycelluloses and their combinations with acrylic polymers, with polyvinylpyrrolidone, modified starch or hydroxyethylcellulose are used as an auxiliary medium to improve penetration of cosmetically active substances into the skin.

Authors of the patent EP 106193 mention the use of water-soluble polymers in liquid compositions for skin washing, where the polymers function as modifiers of foaming properties of the preparations, and they also contribute to pH adjusting.

Patent EP 323798 makes use of water-soluble polymers, preferably polyacrylic acid, as thickening agents in a compositions for skin care. According to the patent US 4774016 in composition for washing skin and hairs, containing nonionogenic tensides as an active

component, some water-soluble polymers, especially cellulose derivatives, acacia gum and pectins are used as thickening agents.

The patent application PV CZ 904-94 describes the use of some polyacrylamides as gelatinizing polymers, where the resulting gel is used as a base for cosmetically and pharmaceutically active substances for treatment of skin, especially of that showing tendency to acne.

A further PV CZ 1660-93 describes an aqueous foaming cosmetic composition for producing shampoos, shaving foams and bath foams, where one of the water-soluble polymers, like e.g. polysaccharides, homopolymers and copolymers derived from the acrylic and metacrylic acid, cellulose derivatives and the like, are used as the conditioning component.

Water-soluble polymers, especially hydroxyethylcellulose, are also used as a thickening agent in a transparent liquid composition which is used as soap according to the patent EP 132961.

According to authors of the patent EP 537737 it is possible to utilize some of the water-soluble polymers as one of the components of a bath composition which prevents forming of precipitates and agglomerates and it decreases skin desiccation.

According to the patent US 5019376 a hair conditioning composition contains a water-soluble polymer, especially hydroxyethylcellulose, as a thickening agent.

Authors of the patent US 5034218 describe the use of polyacrylic acid in shampoos showing conditioning effect, where it functions as a suspending agent.

According to EP 535789 a film forming polymer, usually a silicone wax or a high-molecular silicone polymer, in a polyfunctional cleaning preparation showing cosmetic effect on the skin serves as a protecting medium for the cosmetically active substances (for skin conditioning and moisturizing).

All of the above given, so far used cleaning, washing and cosmetic preparations for skin care, even when using natural or synthetic water-soluble or alcohol-soluble polymers, serve always as auxiliary agents, most often thickening agents.

The main disadvantage of the preparations used so far for cleaning of the skin, especially of hands, consists in that it is necessary to use a further auxiliary medium, usually water, both for diluting the preparation which is in most cases produced in the form of a concentrate, and for

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skin rinsing after application of the composition. This disadvantage becomes obvious especially under extreme conditions, where no water is available.

#### Disclosure of Invention

The nature of the composition according to this invention consists in that it consists of 1 to 60 % by weight of natural and/or synthetic polymers and of a solvent up to the total amount of 100 % by weight.

The polymeric component of the composition may comprise actually any natural or synthetic polymers, preferably polyvinylalcohol, polyvinylpyrrolidone, polyacrylic and polymetacrylic acid and water-soluble derivatives and copolymers thereof, natural or modified starch, water-soluble cellulose derivatives, like e.g. hydroxyethylcellulose, methylhydroxyethylcellulose, carboxymethylhydroxyethylcellulose and the like. The content of the polymeric component in the composition may vary in the range of 1 to 60 % by weight, preferably of 10 to 30 % by weight, while some of the properties, for example the viscosity required, can be achieved by combination of two or more polymers. Water or a mixture of water and of a monobasic alcohol with the ratio monobasic alcohol : water of 1 : 3 to 6 : 1 is used as a solvent for the polymers.

By dissolving the natural and/or synthetic polymer in water or possibly in the mixture water-alcohol a solution or gel results which is, after applying to skin and moderate setting, removed by rubbing it away, while absorbing the dirt from the skin surface.

To increase the cleaning effect of the composition it is possible to add to the mixture ionogenic or nonionogenic tensides which are commonly used in cleaning compositions, like laurylethersulphate or laurylsulphate in the amount of 0.1 to 3 % by weight.

The composition according to this invention may also contain preserving agents, like sodiumbenzoate or chloroacetamide or methylparabene, butylparabene or propylparabene in the amount of 0.1 to 0.3 % by weight, or possibly aromatic compositions in the amount of 0.05 to 0.5 % by weight.

If as a solvent a mixture of water and lower alcohols, like e.g. ethanol, isopropanol and the like, is used, the composition gains increased resistance to temperatures below the zero degree.

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Mechanism of the action of the composition according to this invention consists in that the polymer solution in the liquid or in the gel form penetrates after the application onto the skin very well also into the skin pores, and after a short time as a consequence of evaporation of a considerable amount of the solvent system from the thin preparation layer highly adhesive mass is formed which, when rubbing the skin, treated in this way, removes dirt also from the depth of the skin pores and absorbs it, and the mass easily separates from the skin and falls off spontaneously together with the dirt. Such a skin cleaning system is highly preferable especially under difficult conditions, because it is not necessary to use any other auxiliary means, like water, rag and the like, to achieve the cleaning effect. After application of the composition the skin is clean and dry. Moreover, it is not necessary to use any mechanical abrasives in the composition and except water and alcohol also any other organic solvents to achieve sufficient cleaning effect, whereby the composition preserves good hygienic and ecological properties. When cleaning the skin, it is not necessary to use any other auxiliary medium, like water or another liquid to rinse the hands, or any other medium to remove the cleaning composition used.

#### Examples of Invention Embodiments

##### Example 1

The skin cleaning composition has been prepared by dissolving individual components in water, whereby a viscous solution having the following composition has resulted:

component	content % by weight
polyvinylalcohol	25
sodium benzoate	0,04
chloracetamide	0,16
water	74,8

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Example 2

The skin cleaning composition has been prepared by dissolving individual components in water, whereby a viscous solution having the following composition has resulted:

component	content % by weight
polyvinylalcohol	15
ethanol, 96%	22
water	63

Example 3

The skin cleaning composition has been prepared by dissolving individual components in water, whereby a gel having the following composition has resulted:

component	content % by weight
polyvinylalchol	20
natural starch	3
sodium benzoate	0,04
chloacetamide	0,16
water	76,8

Example 4

The skin cleaning composition has been prepared by dissolving individual components in water, whereby a gel having the following composition has resulted:

component	content % by weight
polyvinylalcohol	15
cosmetic ethanol	25
cosmetic glycerine	10
water	50

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Example 5

The skin cleaning composition has been prepared by dissolving individual components in water, whereby a gel having the following composition has resulted:

component	content % by weight
polyvinylalcohol	10
natural starch	4
cosmetic glycerine	12
sodium benzoate	0,04
chloracetamide	0,16
water	73,8

Example 6

The skin cleaning composition has been prepared by dissolving individual components in water, whereby a gel having the following composition has resulted:

component	content % by weight
polyvinylalcohol	13
cosmetic ethanol	35
cosmetic glycerine	14
sodium laurate	0,9
borax	0,2
cosmetic isopropanol	2,5
water	34,4

Example 7

The skin cleaning composition has been prepared by dissolving individual components in water, whereby a gel having the following composition has resulted:

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component	content % by weight
polyvinylalcohol	15
ethanol, 96%	40
cosmetic glycerine	10
cosmetic isopropanol	3
water	32

Example 8

The skin cleaning composition has been prepared by dissolving individual components in water, whereby a viscous solution having the following composition has resulted:

component	content % by weight
polyvinylpyrrolidone	26
sodium benzoate	0,04
chloracetamide	0,16
water	73,8

Example 9

The skin cleaning composition has been prepared by dissolving individual components in water, whereby a viscous solution having the following composition has resulted:

component	content % by weight
polyacrylic acid	16
sodium benzoate	0,04
chloracetamide	0,16
water	83,8

Example 10

The skin cleaning composition has been prepared by dissolving individual components in water, whereby a gel having the following composition has resulted:

component	content % by weight
polyvinylalcohol	10
cosmetic ethanol	30
cosmetic glycerine	10
sodium laurate	0.5
hydroxyethylcellulose	1.5
cosmetic isopropanol	3
water	45

Industrial Applicability

A composition according to the invention may be used mainly for extremely dirty hand skin.

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## CLAIMS

1. Skin cleaning composition, characterized in that it consists of 1 to 60 % by weight of natural and/or synthetic polymers and of a solvent up to the total amount of 100 % by weight.
2. Skin cleaning composition according to claim 1, characterized in that the solvent is water, or possibly a mixture of water and of a monobasic alcohol where the ratio monobasic alcohol : water is from 1 : 6 to 3 : 1.
3. Skin cleaning composition according to claims 1 and 2, characterized in that the natural and synthetic polymers are chosen from a group consisting of substances like polyvinylalcohol, polyvinylpyrrolidone, polyacrylic and polymetacrylic acid and soluble derivatives and copolymers thereof, natural or modified starch or soluble cellulose derivatives.
4. Skin cleaning composition according to claims 1 to 3, characterized in that it contains preserving additives, like sodium benzoate, chloroacetamide, methylparabene, butylparabene, propylparabene in the amount of 0.1 to 0.3 % by weight.
5. Skin cleaning composition according to claims 1 to 4, characterized in that it contains cosmetically active substances, like glycerine, borax, or possibly extracts of medicinal herbs in the amount of 1 to 30 % by weight.
6. Skin cleaning composition according to claims 1 to 5, characterized in that it contains ionogenic or nonionogenic tensides, like laurylethersulphate or laurylsulphate in the amount of 0.1 to 3 % by weight.
7. Skin cleaning composition according to claims 1 to 6, characterized in that it contains aromatic compositions in the amount of 0.05 to 0.5 % by weight.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/SK 98/00010

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> <b>IPC 6 A61K7/50 A61K7/48</b>			
According to International Patent Classification (IPC) or to both national classification and IPC			
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) <b>IPC 6 A61K</b>			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)			
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>			
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
X	US 5 259 984 A (J. HULL) 9 November 1993 see the whole document ---	1-7	
X	EP 0 231 080 A (IMPERIAL CHEM. IND. PLC) 5 August 1987 see the whole document ---	1-7	
X	WO 97 00667 A (MINNESOTA MINING AND MANUF. CO.) 9 January 1997 see the whole document ---	1-7	
X	WO 97 00668 A (MINNESOTA MINING AND MANUF. CO.) 9 January 1997 see the whole document ---	1-7	
X	US 5 580 553 A (T. NAKAJIMA) 3 December 1996 see claim 1; examples 26-28 ---	1-7	
	-/--		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.		<input checked="" type="checkbox"/> Patent family members are listed in annex.	
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed			
Date of the actual completion of the international search  <b>23 October 1998</b>		Date of mailing of the International search report  <b>18.11.98</b>	
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE "CHEMICAL ABSTRACTS" (HOST: STN),            Abstract 110: 218 819, Columbus, OH, USA;            &amp; JP 63 172 798 A (M. TANIGAKI et al.) 09            JANUARY 1987            XP002081975            see the whole document</p> <p>-----</p>	1-7
X	<p>DATABASE "CHEMICAL ABSTRACTS" (HOST: STN),            Abstract 84: 111 501, Columbus, OH, USA; &amp;            JP 50 142 741 A (MASUHARA K.K.K.) 17            NOVEMBER 1975            XP002081976            see the whole document</p> <p>-----</p>	1-7

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SK 98/00010

### Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2.  Claims Nos.: 1-7 (PARTIAL) because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

In view of the large number of polymer/solvent couples which can be used for the compositions of present claims 1-7, the search has been restricted to compositions with polymers as those used in the examples 1-10 of present application.

3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

#### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No  
PCT/SK 98/00010

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
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